

**Patent Claims**

1. Method of producing polyesters, comprising a crystallisation of a polyester material, wherein the crystallisation is carried out in the presence of a gas with a dew point of (less than or equal to)  $\leq$  approximately  $-10^{\circ}\text{C}$ .
2. Method according to Claim 1, wherein the dew point lies in the range from approximately  $-10^{\circ}\text{C}$  to approximately  $-85^{\circ}\text{C}$ .
3. Method according to one of the previous claims, wherein the gas is air, nitrogen or a mixture of them.
4. Method according to Claim 3, wherein the gas is nitrogen.
5. Method according to one of the previous claims, wherein the intrinsic viscosity I.V. of the polyester material during the crystallisation rises by approximately 0 to approximately 0.11 dl/g.
6. Method according to one of the previous claims, wherein the dew point of the gas is set in dependence of the desired rise of I.V.
7. Method according to one of the previous claims, wherein the crystallisation is carried out at temperatures of approximately  $150^{\circ}\text{C}$  to approximately  $230^{\circ}\text{C}$ .
8. Method according to one of the previous claims, wherein the temperature during the crystallisation is continuously increased by up to approximately  $20^{\circ}\text{C}$ .
9. Method according to one of the previous claims, wherein the crystallisation is carried out for up to approximately 10 h.
10. Method according to one of the previous claims, wherein the crystallisation is carried out in at least two stages.
11. Method according to Claim 10, wherein the 1<sup>st</sup> stage of the crystallisation is carried out at a lower temperature than the 2<sup>nd</sup> stage of the crystallisation.
12. Method according to one of the Claims 10 or 11, wherein the 1<sup>st</sup> stage of the crystallisation is carried out at a temperature of approximately  $150^{\circ}\text{C}$  to approximately  $210^{\circ}\text{C}$  and the 2<sup>nd</sup> stage of the crystallisation is carried out at a temperature of approximately  $180^{\circ}\text{C}$  to approximately  $230^{\circ}\text{C}$ .
13. Method according to one of the Claims 10 to 12, wherein the 1<sup>st</sup> stage of the crystallisation is car-

ried out for up to approximately 2 h and the 2<sup>nd</sup> stage for up to approximately 8 h.

14. Method according to one of the Claims 10 to 13, wherein the 1<sup>st</sup> stage of the crystallisation is carried out using a gas flow under turbulence.
15. Method according to Claim 14, wherein the 1<sup>st</sup> stage of the crystallisation is carried out in a fluidised bed reactor.
16. Method according to one of the Claims 10 to 15, wherein in the 2<sup>nd</sup> stage of the crystallisation the polyester material (i) flows under mechanical disturbance and the gas in counterflow, (ii) under mechanical disturbance and the gas in uniflow and (iii) without mechanical disturbance and the gas in uniflow.
17. Method according to Claim 16, wherein the 2<sup>nd</sup> stage of the crystallisation is carried out in a shaft crystalliser.
18. Method for the production of a polyester formed body, wherein polyester material is obtained using a method according to one of the previous claims.
19. Method according to Claim 18, wherein the polyester formed body is selected from the group consisting of bottles, films, filaments, fibres and technical high strength threads.
20. Method according to one of the Claims 18 or 19, wherein polyester material is used without carrying out a solid state polycondensation in a following reaction stage for the production of the polyester formed bodies.